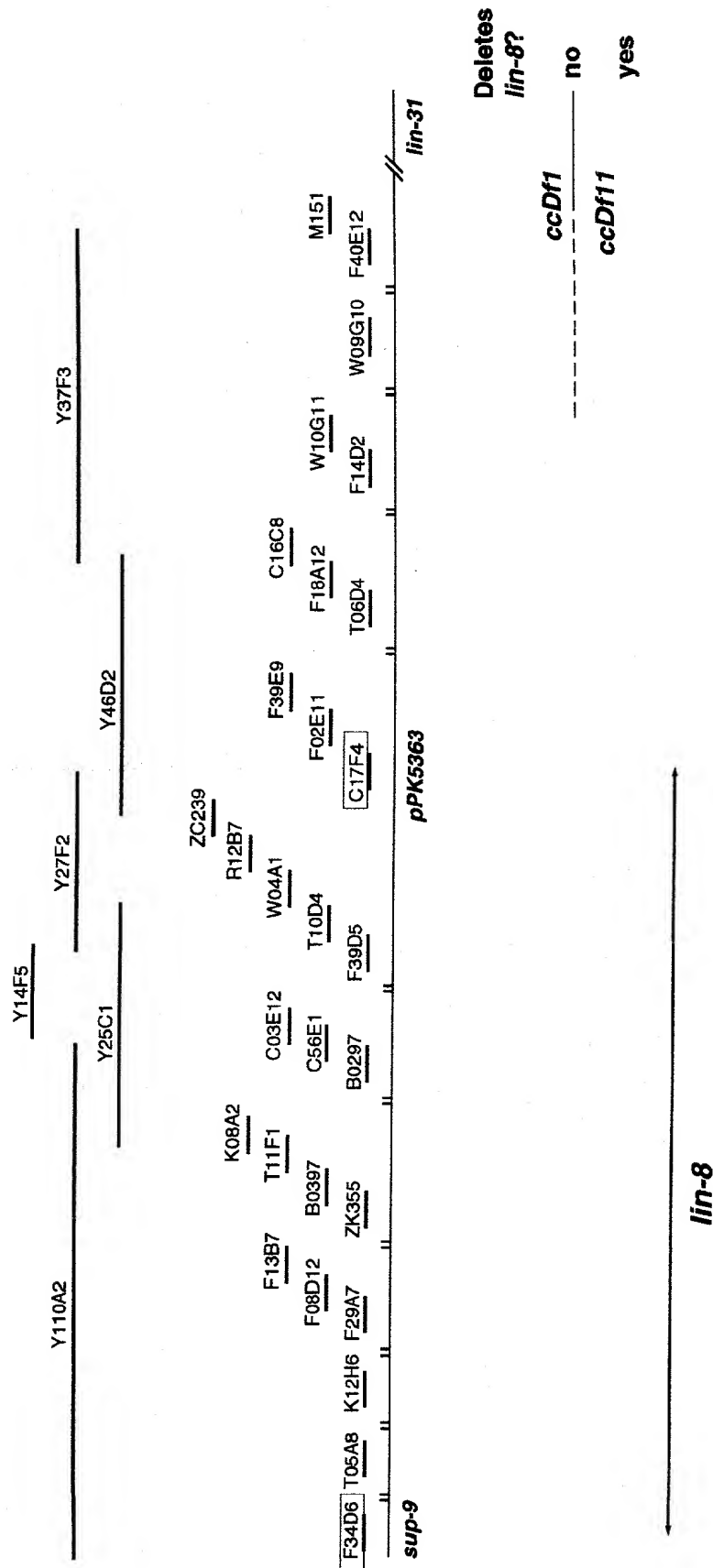


| Phase | Start | End | Time | Phase | Start | End | Time |
|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 00:00 | 00:05 | 5 min | 1 | 00:00 | 00:05 | 5 min |
| 2 | 00:05 | 00:10 | 5 min | 2 | 00:05 | 00:10 | 5 min |
| 3 | 00:10 | 00:15 | 5 min | 3 | 00:10 | 00:15 | 5 min |
| 4 | 00:15 | 00:20 | 5 min | 4 | 00:15 | 00:20 | 5 min |
| 5 | 00:20 | 00:25 | 5 min | 5 | 00:20 | 00:25 | 5 min |
| 6 | 00:25 | 00:30 | 5 min | 6 | 00:25 | 00:30 | 5 min |
| 7 | 00:30 | 00:35 | 5 min | 7 | 00:30 | 00:35 | 5 min |
| 8 | 00:35 | 00:40 | 5 min | 8 | 00:35 | 00:40 | 5 min |
| 9 | 00:40 | 00:45 | 5 min | 9 | 00:40 | 00:45 | 5 min |
| 10 | 00:45 | 00:50 | 5 min | 10 | 00:45 | 00:50 | 5 min |
| 11 | 00:50 | 00:55 | 5 min | 11 | 00:50 | 00:55 | 5 min |
| 12 | 00:55 | 01:00 | 5 min | 12 | 00:55 | 01:00 | 5 min |
| 13 | 01:00 | 01:05 | 5 min | 13 | 01:00 | 01:05 | 5 min |
| 14 | 01:05 | 01:10 | 5 min | 14 | 01:05 | 01:10 | 5 min |
| 15 | 01:10 | 01:15 | 5 min | 15 | 01:10 | 01:15 | 5 min |
| 16 | 01:15 | 01:20 | 5 min | 16 | 01:15 | 01:20 | 5 min |
| 17 | 01:20 | 01:25 | 5 min | 17 | 01:20 | 01:25 | 5 min |
| 18 | 01:25 | 01:30 | 5 min | 18 | 01:25 | 01:30 | 5 min |
| 19 | 01:30 | 01:35 | 5 min | 19 | 01:30 | 01:35 | 5 min |
| 20 | 01:35 | 01:40 | 5 min | 20 | 01:35 | 01:40 | 5 min |
| 21 | 01:40 | 01:45 | 5 min | 21 | 01:40 | 01:45 | 5 min |
| 22 | 01:45 | 01:50 | 5 min | 22 | 01:45 | 01:50 | 5 min |
| 23 | 01:50 | 01:55 | 5 min | 23 | 01:50 | 01:55 | 5 min |
| 24 | 01:55 | 02:00 | 5 min | 24 | 01:55 | 02:00 | 5 min |
| 25 | 02:00 | 02:05 | 5 min | 25 | 02:00 | 02:05 | 5 min |
| 26 | 02:05 | 02:10 | 5 min | 26 | 02:05 | 02:10 | 5 min |
| 27 | 02:10 | 02:15 | 5 min | 27 | 02:10 | 02:15 | 5 min |
| 28 | 02:15 | 02:20 | 5 min | 28 | 02:15 | 02:20 | 5 min |
| 29 | 02:20 | 02:25 | 5 min | 29 | 02:20 | 02:25 | 5 min |
| 30 | 02:25 | 02:30 | 5 min | 30 | 02:25 | 02:30 | 5 min |
| 31 | 02:30 | 02:35 | 5 min | 31 | 02:30 | 02:35 | 5 min |
| 32 | 02:35 | 02:40 | 5 min | 32 | 02:35 | 02:40 | 5 min |
| 33 | 02:40 | 02:45 | 5 min | 33 | 02:40 | 02:45 | 5 min |
| 34 | 02:45 | 02:50 | 5 min | 34 | 02:45 | 02:50 | 5 min |
| 35 | 02:50 | 02:55 | 5 min | 35 | 02:50 | 02:55 | 5 min |
| 36 | 02:55 | 03:00 | 5 min | 36 | 02:55 | 03:00 | 5 min |
| 37 | 03:00 | 03:05 | 5 min | 37 | 03:00 | 03:05 | 5 min |
| 38 | 03:05 | 03:10 | 5 min | 38 | 03:05 | 03:10 | 5 min |
| 39 | 03:10 | 03:15 | 5 min | 39 | 03:10 | 03:15 | 5 min |
| 40 | 03:15 | 03:20 | 5 min | 40 | 03:15 | 03:20 | 5 min |
| 41 | 03:20 | 03:25 | 5 min | 41 | 03:20 | 03:25 | 5 min |
| 42 | 03:25 | 03:30 | 5 min | 42 | 03:25 | 03:30 | 5 min |
| 43 | 03:30 | 03:35 | 5 min | 43 | 03:30 | 03:35 | 5 min |
| 44 | 03:35 | 03:40 | 5 min | 44 | 03:35 | 03:40 | 5 min |
| 45 | 03:40 | 03:45 | 5 min | 45 | 03:40 | 03:45 | 5 min |
| 46 | 03:45 | 03:50 | 5 min | 46 | 03:45 | 03:50 | 5 min |
| 47 | 03:50 | 03:55 | 5 min | 47 | 03:50 | 03:55 | 5 min |
| 48 | 03:55 | 04:00 | 5 min | 48 | 03:55 | 04:00 | 5 min |
| 49 | 04:00 | 04:05 | 5 min | 49 | | | |



| Group | Age | Height | Weight | Body fat | Maximal oxygen consumption | Maximal heart rate | Maximal stroke volume | Maximal cardiac output |
|-------|-----|--------|--------|----------|----------------------------|--------------------|-----------------------|------------------------|
| 1 | 20 | 170 | 65 | 15 | 3.5 | 180 | 120 | 21.6 |
| 2 | 25 | 175 | 75 | 18 | 3.8 | 190 | 130 | 23.8 |
| 3 | 30 | 180 | 85 | 20 | 4.0 | 200 | 140 | 25.6 |
| 4 | 35 | 185 | 95 | 22 | 4.2 | 210 | 150 | 27.2 |
| 5 | 40 | 190 | 105 | 25 | 4.5 | 220 | 160 | 28.8 |
| 6 | 45 | 195 | 115 | 28 | 4.8 | 230 | 170 | 30.4 |
| 7 | 50 | 200 | 125 | 30 | 5.0 | 240 | 180 | 32.0 |
| 8 | 55 | 205 | 135 | 32 | 5.2 | 250 | 190 | 33.6 |
| 9 | 60 | 210 | 145 | 35 | 5.5 | 260 | 200 | 35.2 |
| 10 | 65 | 215 | 155 | 38 | 5.8 | 270 | 210 | 36.8 |
| 11 | 70 | 220 | 165 | 40 | 6.0 | 280 | 220 | 38.4 |
| 12 | 75 | 225 | 175 | 42 | 6.2 | 290 | 230 | 40.0 |
| 13 | 80 | 230 | 185 | 45 | 6.5 | 300 | 240 | 41.6 |
| 14 | 85 | 235 | 195 | 48 | 6.8 | 310 | 250 | 43.2 |
| 15 | 90 | 240 | 205 | 50 | 7.0 | 320 | 260 | 44.8 |
| 16 | 95 | 245 | 215 | 52 | 7.2 | 330 | 270 | 46.4 |
| 17 | 100 | 250 | 225 | 55 | 7.5 | 340 | 280 | 48.0 |
| 18 | 105 | 255 | 235 | 58 | 7.8 | 350 | 290 | 49.6 |
| 19 | 110 | 260 | 245 | 60 | 8.0 | 360 | 300 | 51.2 |
| 20 | 115 | 265 | 255 | 62 | 8.2 | 370 | 310 | 52.8 |
| 21 | 120 | 270 | 265 | 65 | 8.5 | 380 | 320 | 54.4 |
| 22 | 125 | 275 | 275 | 68 | 8.8 | 390 | 330 | 56.0 |
| 23 | 130 | 280 | 285 | 70 | 9.0 | 400 | 340 | 57.6 |
| 24 | 135 | 285 | 295 | 72 | 9.2 | 410 | 350 | 59.2 |
| 25 | 140 | 290 | 305 | 75 | 9.5 | 420 | 360 | 60.8 |
| 26 | 145 | 295 | 315 | 78 | 9.8 | 430 | 370 | 62.4 |
| 27 | 150 | 300 | 325 | 80 | 10.0 | 440 | 380 | 64.0 |
| 28 | 155 | 305 | 335 | 82 | 10.2 | 450 | 390 | 65.6 |
| 29 | 160 | 310 | 345 | 85 | 10.5 | 460 | 400 | 67.2 |
| 30 | 165 | 315 | 355 | 88 | 10.8 | 470 | 410 | 68.8 |
| 31 | 170 | 320 | 365 | 90 | 11.0 | 480 | 420 | 70.4 |
| 32 | 175 | 325 | 375 | 92 | 11.2 | 490 | 430 | 72.0 |
| 33 | 180 | 330 | 385 | 95 | 11.5 | 500 | 440 | 73.6 |
| 34 | 185 | 335 | 395 | 98 | 11.8 | 510 | 450 | 75.2 |
| 35 | 190 | 340 | 405 | 100 | 12.0 | 520 | 460 | 76.8 |
| 36 | 195 | 345 | 415 | 102 | 12.2 | 530 | 470 | 78.4 |
| 37 | 200 | 350 | 425 | 105 | 12.5 | 540 | 480 | 80.0 |
| 38 | 205 | 355 | 435 | 108 | 12.8 | 550 | 490 | 81.6 |
| 39 | 210 | 360 | 445 | 110 | 13.0 | 560 | 500 | 83.2 |
| 40 | 215 | 365 | 455 | 112 | 13.2 | 570 | 510 | 84.8 |
| 41 | 220 | 370 | 465 | 115 | 13.5 | 580 | 520 | 86.4 |
| 42 | 225 | 375 | 475 | 118 | 13.8 | 590 | 530 | 88.0 |
| 43 | 230 | 380 | 485 | 120 | 14.0 | 600 | 540 | 89.6 |
| 44 | 235 | 385 | 495 | 122 | 14.2 | 610 | 550 | 91.2 |
| 45 | 240 | 390 | 505 | 125 | 14.5 | 620 | 560 | 92.8 |
| 46 | 245 | 395 | 515 | 128 | 14.8 | 630 | 570 | 94.4 |

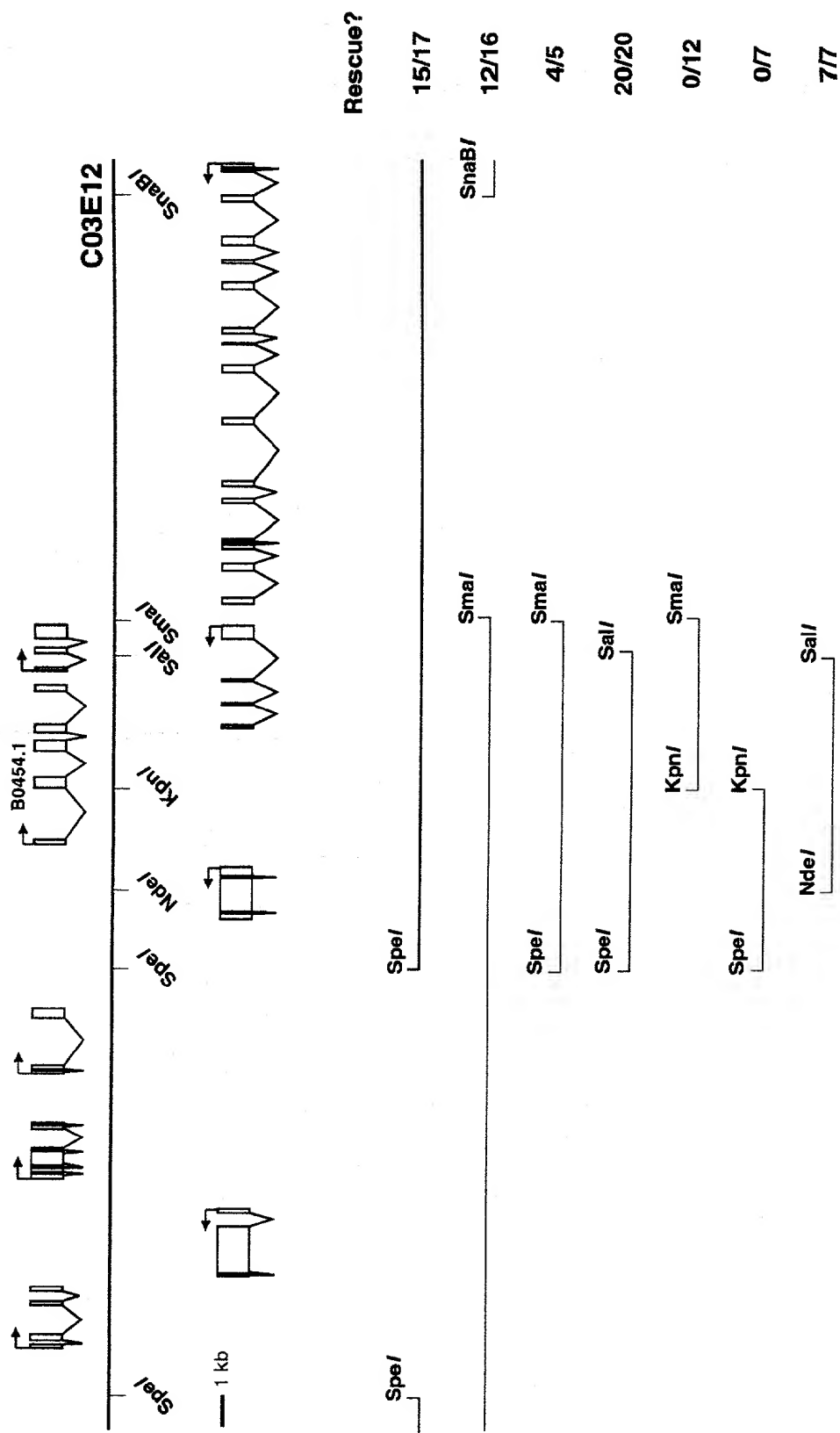


FIG. 4

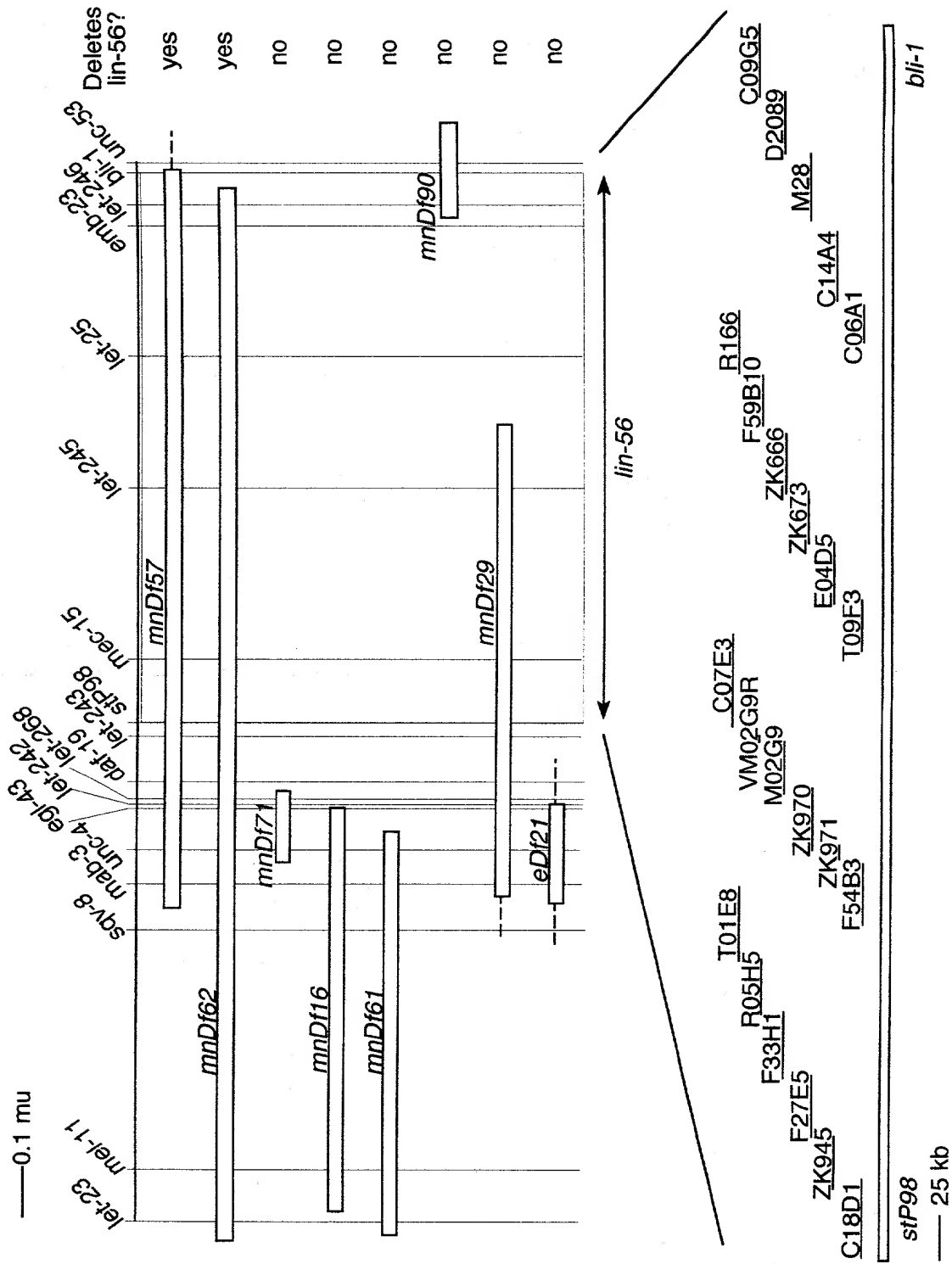


FIG. 5

FIG. 5

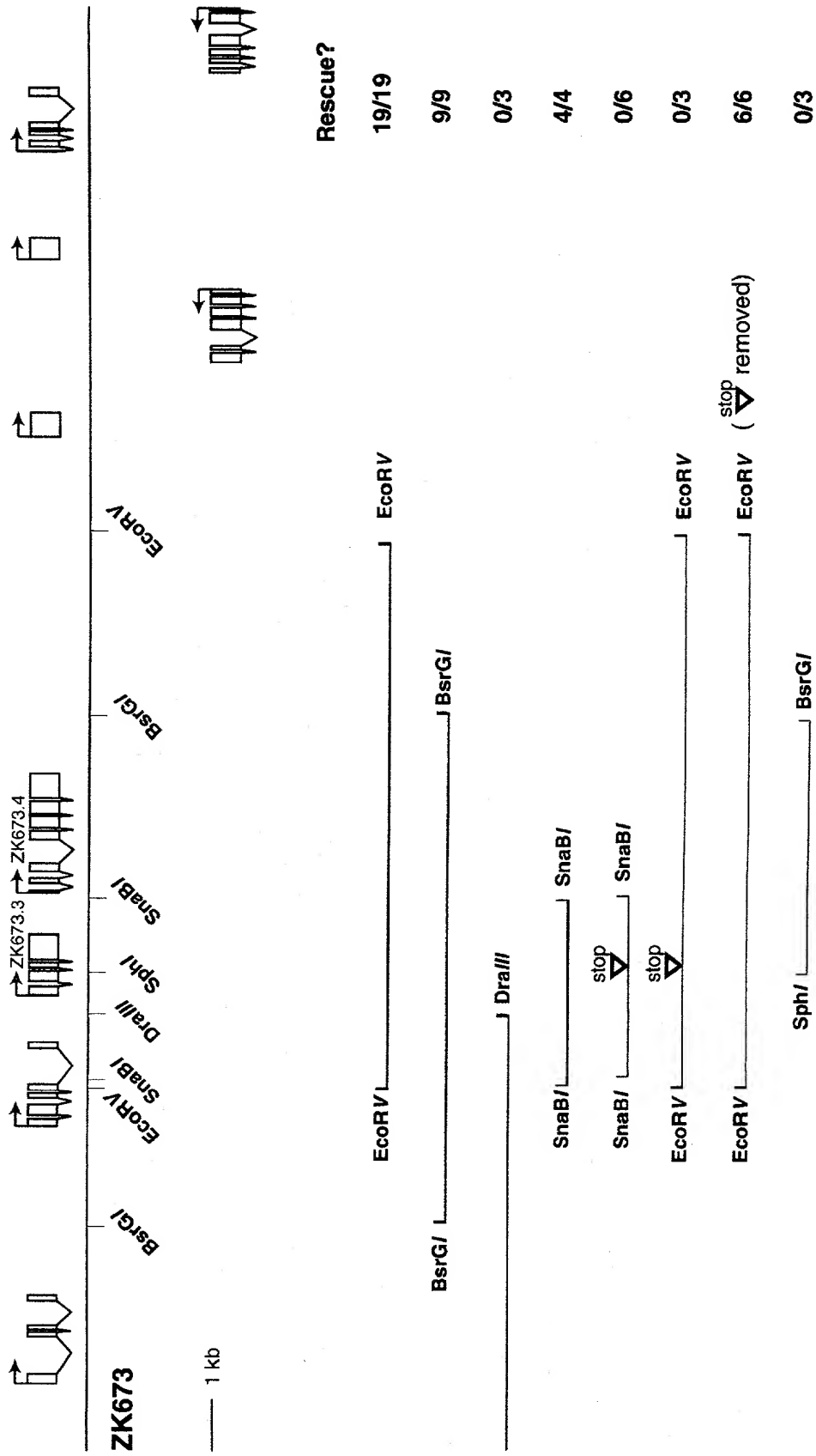


FIG. 6

LIN-56

MDHHAMYRTAEFNKTTVRLLAEFI EKTGQNATIVNMDSFLEFFAYLNPTA 50
 PIPTVPEIEKQLLLKSPIRCIVCGMETESDSAVTLSIDNASIILTATVIG 100
 YCRDPSDAVNQIRKESLRACKHFNSTFHVIFEGQLQIENTYCAHHAKYSL 150
 ANRWCKVYTMIRSSLGEQFTKFDVRNFKSILQSFLDTFCEIDDDKKDKES 200
 SHFDECFEEMDSNVEIKMESPQEEAAEKSKFSENLEVKLEPIETHELD 250
 KTISDFSSSDI IDSSQKLQNGFFPEKVEQMDKYSNKLKDEASDKKYEKPG 300
 KKDYVEEEGYWAPIITDSEDDDEA 322

69

211

176

274

128

270

235

333

RIVVGMETESDSAVTLSIDNASIILTATVIGYCRDPSPDAVNQIRKESLRA TK FNSIF
 PILL EKALLMRESIAMTDNEAVKVLMAAVMSGHFRMATAEKATRHERLRM YD VDFVY
 PIII GNEVPGHRSIRVSDDDAATFLLTAAVLTQKTIRQA KRDLSEYLTV LR SLHYV
 PLLV NQMEMTKVRSVNNTDAYIMIYVCVMNDKYDMDKA KELARMQRFKC VS LDELY *

FIG. 7

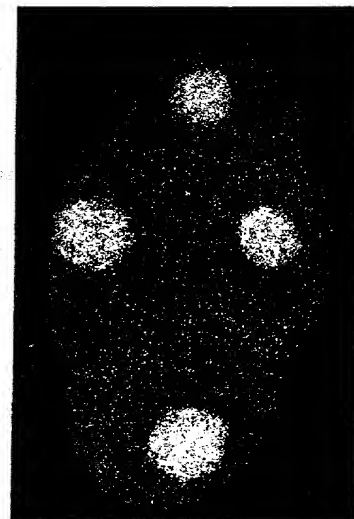
| | | | | | |
|---------------|------|----------------------|---------------------|----------------|--------|
| | | 10 | 20 | 30 | 40 |
| | |* |* |* |* |
| consensus | 1 | FDWEDYL--- | EETGARAAPVELF--- | DKQPVDSPNGFKV | 34 |
| lin-61 | 146 | VNYVNNCi- | dGEIVGQTSLSPKF--- | DEGKALLSKHRFKV | 181 |
| lin-61 | 23 | YLWESYLh | qfEKGKTSFIPVEAF--- | NRNLTVNFNCEVKE | 59 |
| lin-61 | 388 | FRWDEYL--- | EKESAETLPLDLF--- | KPMPSQERLDKFKV | 421 |
| hl(3)mbt | 206 | WSWESYL--- | EEQKAITAPVSLFg-- | DSQAVTHNKNGFKL | 240 |
| hl(3)mbt | 314 | FSWSQYM--- | CSTRAQAAPKMF--- | VSQSHSPPLGFQV | 347 |
| hl(3)mbt | 422 | FCWEKYL--- | EETGASAVPTWAF----- | KVRPPHSFLV | 451 |
| tumor sup(Dm) | 819 | FRWSEYLk-- | SKGKDVAAPIHLF---- | LNPFPISPNCFEI | 852 |
| tumor sup(Dm) | 926 | FSWSRYL--- | VKTGGKAAPRALFghl | NMQQMDVRNGFAV | 962 |
| tumor sup(Dm) | 1035 | FIWDDYI--- | SEVGGMAASKELF----- | TPRQPMQEYQE | 1064 |
| scmh1 (mouse) | 28 | FTWDKYL--- | KETCSVPAPVHCF---- | KQSYTPPSNEFKI | 60 |
| scml2 (human) | 139 | SSWPMFLl- | kTLNGSEMASATLF--- | KKEPPKPLNNFKV | 174 |
| | | 50 | 60 | 70 | 80 |
| | |* |* |* |* |
| consensus | 35 | -----GMKLEAVDP----- | RNPSLICVATVVEVKGYR | 61 | |
| lin-61 | 182 | -----GQRELLNY----- | SNSTEIRVARIQICGRR | 208 | |
| lin-61 | 60 | -----GVIFETVVHdydknc | DSIQVRWFARIEKVCGRY | 92 | |
| lin-61 | 422 | iliskrvGLRLEADM----- | CENQFICPATVKSVMHRL | 455 | |
| hl(3)mbt | 241 | -----GMKLEGIDP----- | QHPSMYFILTVAEVCGRY | 267 | |
| hl(3)mbt | 348 | -----GMKLEAVDR----- | MNPSLVCVASVTDVDSR | 374 | |
| hl(3)mbt | 452 | -----NMKLEAVDR----- | RNPALIRVASVEDVEDHR | 478 | |
| tumor sup(Dm) | 853 | -----GMKLEAIDP----- | ENCSLFCVCSSIVEVRGYR | 879 | |
| tumor sup(Dm) | 963 | -----GMHLEAEDL----- | NDTGKICVATVTDILDER | 989 | |
| tumor sup(Dm) | 1065 | -----RMKLEVVDQ----- | RNPCLIRPATVVTTRKGYR | 1091 | |
| scmh1 (mouse) | 61 | -----SMKLEAQDP----- | RNTTSTCIATVVGLTGAR | 87 | |
| scml2 (human) | 175 | -----GMKLEAIDK----- | KNPYLICPATIGDVKGDE | 201 | |
| | | 90 | 100 | 110 | 120 |
| | |* |* |* |* |
| consensus | 62 | LLLHFD----- | GWDDR----- | YDFWCDADSPDIF | 85 |
| lin-61 | 209 | MNVSIITk | kdfpeslpaDDDRqvfssg | SQYWIDEGSFFIF | 246 |
| lin-61 | 93 | VLAQFI----- | GAD----- | TKFWLNILSDDMF | 114 |
| lin-61 | 456 | INVNFD----- | GWDEE----- | FDELYDVDSHDIL | 479 |
| hl(3)mbt | 268 | LRLHFD----- | GYSEC----- | HDFWVNANSPDIH | 291 |
| hl(3)mbt | 375 | FLVHFD----- | NWDDT----- | YDYWCDPSSPYIH | 398 |
| hl(3)mbt | 479 | IKIHFD----- | GWSHG----- | YDFWIDADHPDIH | 502 |
| tumor sup(Dm) | 880 | LKLSFD----- | GYSSM----- | YDFWVNADSQDIF | 903 |
| tumor sup(Dm) | 990 | IRVHFD----- | GWDDC----- | YDLWVHITSPYIH | 1013 |
| tumor sup(Dm) | 1092 | VQLHLD----- | CWPTTE----- | YYFWLEDDSPDLH | 1115 |
| scmh1 (mouse) | 88 | LRLRLD----- | GSDNK----- | NDFWRLVDSSEIQ | 111 |
| scml2 (human) | 202 | VHITFD----- | GWSGA----- | FDYWCKYDSRDIF | 225 |
| | | 130 | | | |
| | |* |* | | |
| consensus | 86 | PVGWCEKNGHPLQPP | 100 | | |
| lin-61 | 249 | PVGFAAVNGYQLNAK | 263 | | |
| lin-61 | 115 | GLANAAM-SDPNMDK | 128 | | |
| lin-61 | 480 | PIGWCEAHSYVLQPP | 494 | | |
| hl(3)mbt | 292 | PAGWFECTGHKLQLP | 306 | | |
| hl(3)mbt | 399 | PVGWCQKQKPLTPP | 413 | | |
| hl(3)mbt | 503 | PAGWCSKTGHPLQPP | 517 | | |
| tumor sup(Dm) | 904 | PPGWCDATARVLQAP | 918 | | |
| tumor sup(Dm) | 1014 | PCGWHEGRQQLIVPP | 1028 | | |
| tumor sup(Dm) | 1116 | PIGWCEATSHELETP | 1130 | | |
| scmh1 (mouse) | 112 | PIGNCEKNGGMLQPP | 126 | | |
| scml2 (human) | 226 | PAGWCRLTGDLVQPP | 240 | | |

SCANNED, # 20

FIG. 8

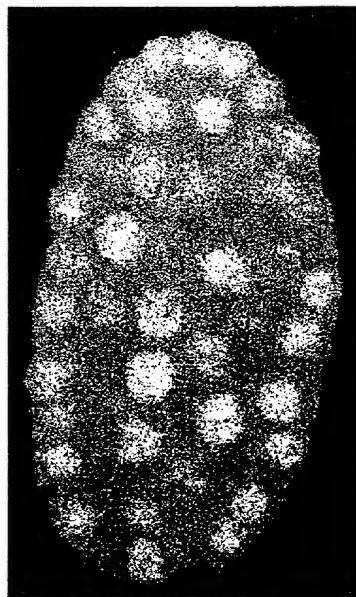
[illegible]

FIG. 9B



4-cell embryo

FIG. 9C



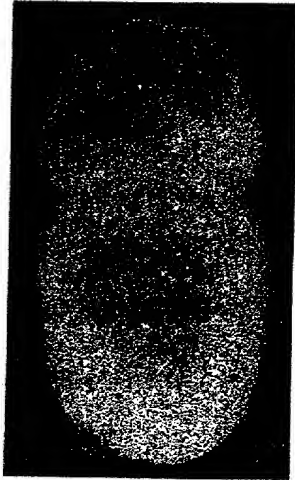
multicellular embryo

FIG. 9D



vulval region of an L4 larva

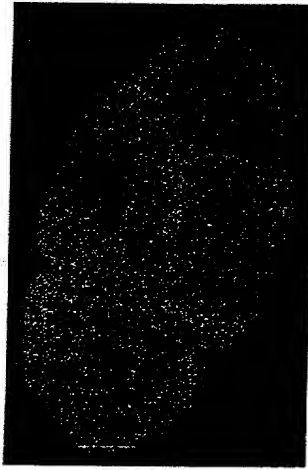
FIG. 10A



2-cell embryo

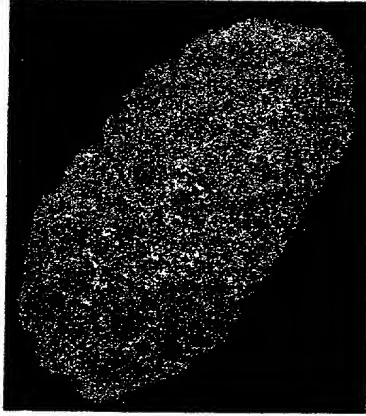
FIG. 10A

FIG. 10B



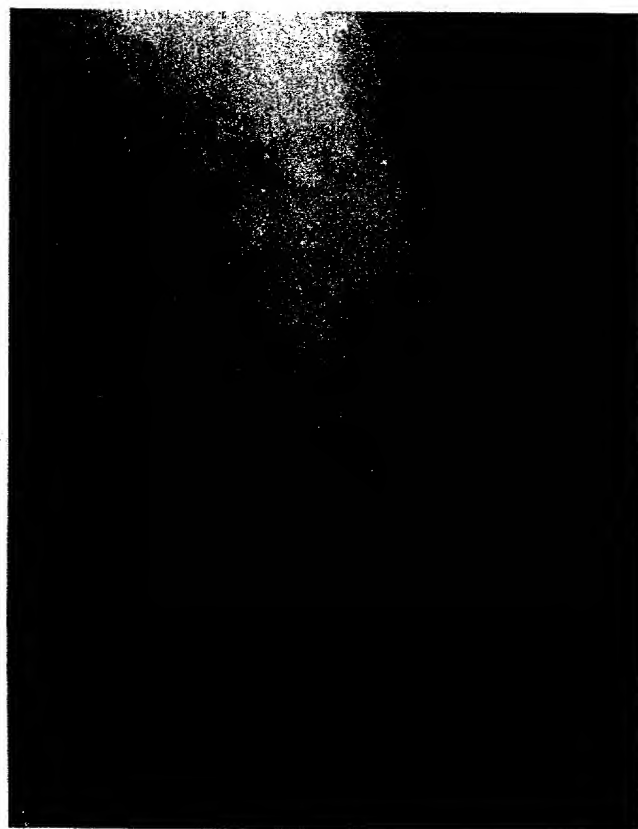
4-cell embryo

FIG. 10C



multicellular embryo

FIG. 10D



vulval region of an L4 larva

FIG. 11A



FIG. 11A

FIG. 11B




DAPI

FIG. 11C



α Tubulin



B



FIG. 13A

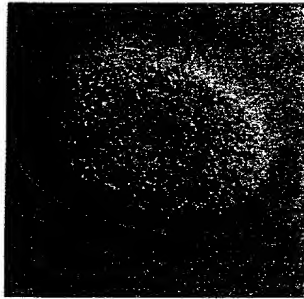


FIG. 13B



FIG. 13C



α Tubulin

DAPI